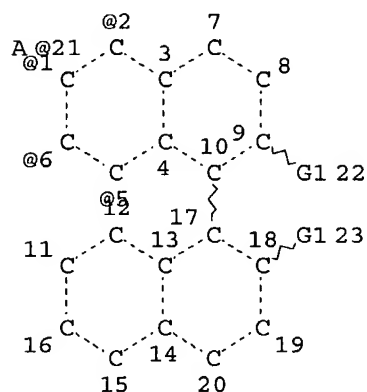


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L2 HAS NO ANSWERS
L2 STR
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VPA 21-2/1/5/6 U
NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RSPEC 16 10
NUMBER OF NODES IS 23
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STEREO ATTRIBUTES: NONE
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FULL SCREEN SEARCH COMPLETED - 13623 TO ITERATE
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100.0% PROCESSED 13623 ITERATIONS
SEARCH TIME: 00.00.01
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1811 ANSWERS

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L4 1811 SEA SSS FUL L2
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L5 591 L4

=> s 15 and catalyst?

847836 CATALYST?

L6 317 L5 AND CATALYST?

=> s 16 and py<1998

18119853 PY<1998

L7 53 L6 AND PY<1998

=> s 17 and us/pc

1295463 US/PC

L8 7 L7 AND US/PC

=> d hitstr 7

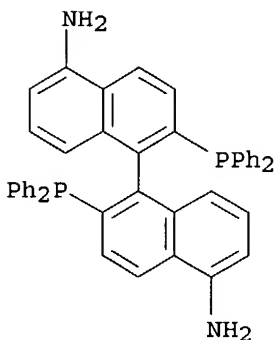
L8 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

IT 114317-10-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and complexation of, with rhodium norbornadiene perchlorate)

RN 114317-10-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (+)-  
(9CI) (CA INDEX NAME)

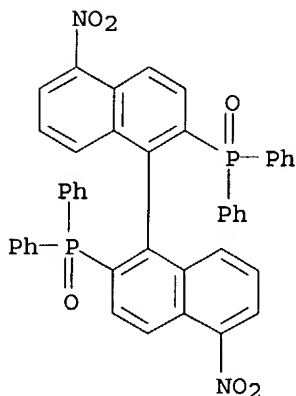


IT 114317-08-7P 114317-09-8P

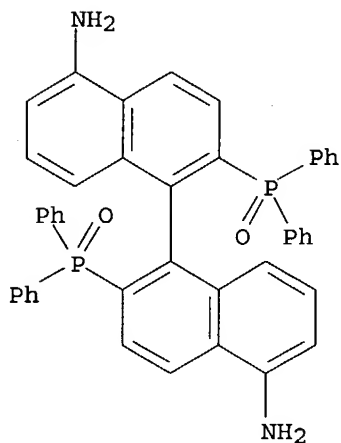
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reduction of)

RN 114317-08-7 CAPLUS

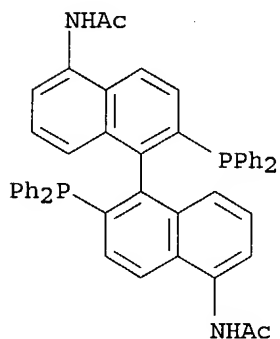
CN Phosphine oxide, (5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-  
, (+)- (9CI) (CA INDEX NAME)



RN 114317-09-8 CAPLUS  
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)-, (+)-  
 (9CI) (CA INDEX NAME)



IT 114317-11-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 114317-11-2 CAPLUS  
 CN Acetamide, N,N'-[2,2'-bis(diphenylphosphino) [1,1'-binaphthalene]-5,5'-  
 diyl]bis-, (+)- (9CI) (CA INDEX NAME)

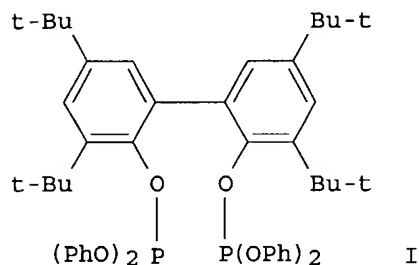


=> d bib abs hitstr 1-7

L8 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:736236 CAPLUS  
 DN 128:23014  
 TI Preparation of bisphosphite compounds as cocatalysts for hydroformylation  
 reaction  
 IN Urata, Hisao; Itagaki, Hiroaki; Takahashi, Eitaro; Wada, Yasuhiro; Tanaka,  
 Yoshiyuki; Ogino, Yasukazu  
 PA Mitsubishi Chemical Corp., Japan  
 SO Ger. Offen., 88 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 19717359	A1	19971106	DE 1997-19717359	19970424 <--
	JP 10045775	A2	19980217	JP 1997-107326	19970424
	JP 10045776	A2	19980217	JP 1997-107327	19970424
	US 5910600	A	19990608	US 1997-845835	19970428 <--
	IN 188835	A	20021109	IN 1997-CA764	19970429
	CN 1167769	A	19971217	CN 1997-110860	19970430 <--
	CN 1087298	B	20020710		
	BR 9701970	A	19980915	BR 1997-1970	19970430
PRAI	JP 1996-109185	A	19960430		
	JP 1996-109186	A	19960430		
OS	MARPAT 128:23014				
GI					



AB The preparation of title compds., (Z1O)(Z2O)P-O-Ar-Ar-O-P(OZ3)(OZ4) [Ar-Ar = (un)substituted bisarylene group; Z1-Z4 = C4-20 aromatic or heteroarom. group; etc.], useful as cocatalyst for hydroformylation reaction is described. Thus, reaction of PhOH with PCl3 in the presence of pyridine in PhMe gave ClP(OPh)2 which on lithiation with BuLi in PhMe followed by treatment with 3,3',5,5'-tetra-tert-butyl-2,2'-biphenyldiol gave 21.5% title compound I. [Rh(OAc)(COD)]/I catalyzed hydroformylation of propylene with synthesis gas H2/CO gave 95.8% mixture of butyraldehyde and isobutyraldehyde.

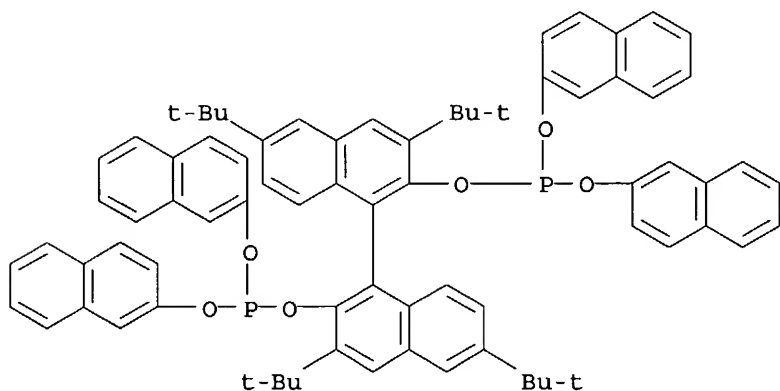
IT 198979-99-6P 198980-03-9P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of bisphosphite compds. as cocatalysts for hydroformylation reaction)

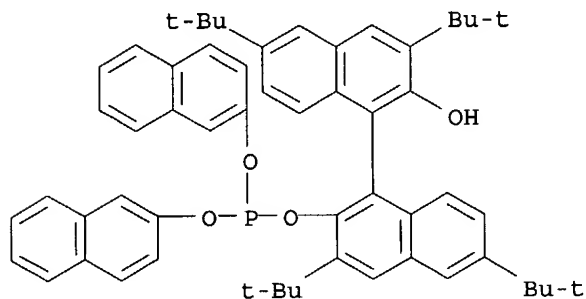
RN 198979-99-6 CAPLUS

CN Phosphorous acid, 3,3',6,6'-tetrakis(1,1-dimethylethyl)[1,1'-binaphthalenyl]-2,2'-diyl tetra-2-naphthalenyl ester (9CI) (CA INDEX NAME)



RN 198980-03-9 CAPLUS

CN Phosphorous acid, di-2-naphthalenyl 3,3',6,6'-tetrakis(1,1-dimethylethyl)-2'-hydroxy[1,1'-binaphthalen]-2-yl ester (9CI) (CA INDEX NAME)



L8 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:53936 CAPLUS

DN 126:89568

TI Method for producing 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl (BINAP) derivatives

IN Kai, Don Wie; Hughes, David L.; Lebeck, Sirban; Barhoven, Thomas R.

PA Merck & Company Incorporated, USA

SO Jpn. Kokai Tokkyo Koho, 12 pp.

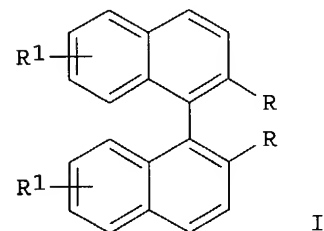
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08311090	A2	19961126	JP 1996-121938	19960516 <--
	US 6333435	B1	20011225	US 1995-443616	19950518 <--
PRAI	US 1995-443616	A	19950518		
OS	CASREACT 126:89568; MARPAT 126:89568				
GI					



AB The title compds. [I; R = PPh<sub>2</sub>; R<sub>1</sub> = C<sub>1</sub>-4 alkyl, (un)protected HO, C<sub>1</sub>-4 alkoxy, C<sub>1</sub>-4 acyl, (un)protected CO<sub>2</sub>H, C<sub>1</sub>-4 alkoxy-carbonyl], which are useful as chiral ligands for catalytic asym. induction, are prepared by reaction of sulfonate esters I (R = OSO<sub>2</sub>CF<sub>3</sub>, OSO<sub>2</sub>Me, OSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>Me-p) with diphenylphosphine in the presence of an amine base and a nickel catalyst. The nickel catalyst is selected from NiCl<sub>2</sub>.bis(diphenylphosphinyl)-C<sub>1</sub>-4 alkane, NiBr<sub>2</sub>, NiCl<sub>2</sub>, NiCl<sub>2</sub>.bis(diphenylphosphinyl)ferrocene (II), NiCl<sub>2</sub>.bis(triphenylphosphine), Ni.tetrakis(triphenylphosphine), Ni.tetrakis(triphenylphosphite), and Ni.dicarbonylbis(triphenylphosphine). The amine base is selected from 1,4-diazabicyclo[2.2.2]octane (DABCO), Et<sub>3</sub>N, diisopropylethylamine, tri(n-propyl)amine, and tri(n-butyl)amine. This reaction is carried out in DMF, MeCN, and N-methylpyrrolidinone without racemization. Thus, I (R = OH, R<sub>1</sub> = 7- and 7'-OMe) was triflated by triflic anhydride in pyridine

at 0° for 3 h to give I (R = OSO<sub>2</sub>CF<sub>3</sub>, R<sub>1</sub> = 7- and 7'-OMe) (III).  
 Ph<sub>2</sub>PH (4.7 mmol) was added to a solution of 1.6 mmol II in 15 mL DMF and heated at 100° for 30 min, followed by adding a solution of 8.18 mmol III and 32.8 mmol DABCO in DMF, and the resulting mixture was heated at 100° in dark overnight, while adding twice diphenylphosphine after 1.5 and 4.5 h, to give I (R = PPh<sub>2</sub>, R<sub>1</sub> = 7- and 7'-OMe).

IT 185341-91-7P 185341-92-8P 185341-93-9P

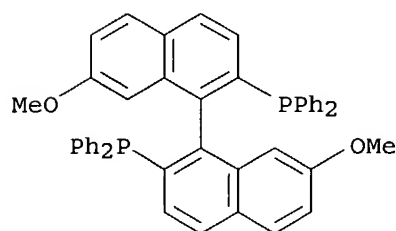
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);

USES (Uses)

(preparation of bis(diphenylphosphino)binaphthyl (BINAP) derivs. by coupling of dihydroxybinaphthyl disulfonate esters with diphenylphosphine)

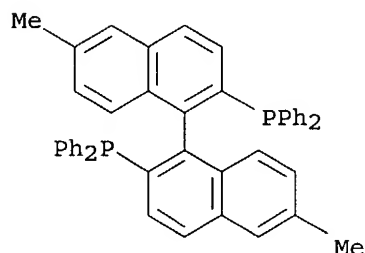
RN 185341-91-7 CAPLUS

CN Phosphine, (7,7'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-  
 (9CI) (CA INDEX NAME)



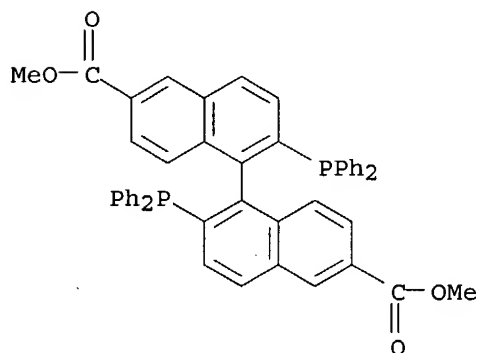
RN 185341-92-8 CAPLUS

CN Phosphine, (6,6'-dimethyl[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-  
 (9CI) (CA INDEX NAME)



RN 185341-93-9 CAPLUS

CN [1,1'-Binaphthalene]-6,6'-dicarboxylic acid, 2,2'-bis(diphenylphosphino)-, dimethyl ester (9CI) (CA INDEX NAME)



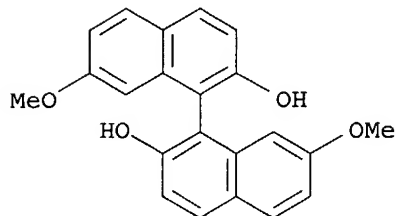
IT 128702-28-3P 172876-99-2P 185341-94-0P  
 185341-95-1P 185341-96-2P 185341-97-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(preparation of bis(diphenylphosphino)binaphthyl (BINAP) derivs. by coupling  
of dihydroxybinaphthyl disulfonate esters with diphenylphosphine)

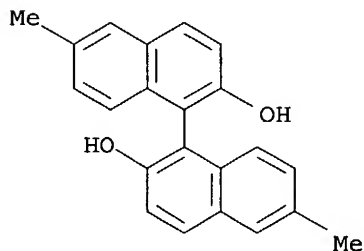
RN 128702-28-3 CAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 7,7'-dimethoxy- (9CI) (CA INDEX NAME)



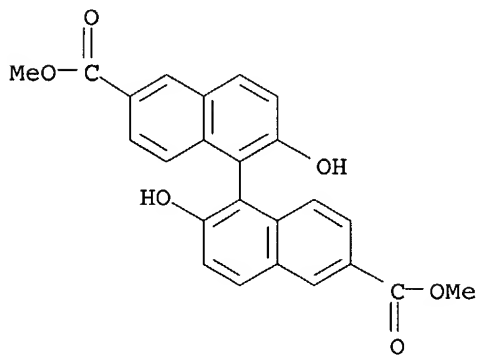
RN 172876-99-2 CAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 6,6'-dimethyl- (9CI) (CA INDEX NAME)



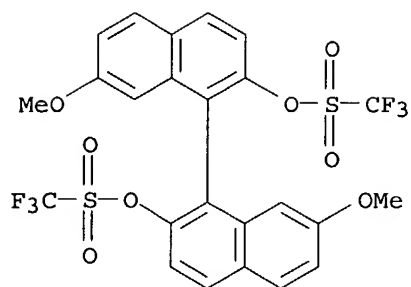
RN 185341-94-0 CAPLUS

CN [1,1'-Binaphthalene]-6,6'-dicarboxylic acid, 2,2'-dihydroxy-, dimethyl  
ester (9CI) (CA INDEX NAME)



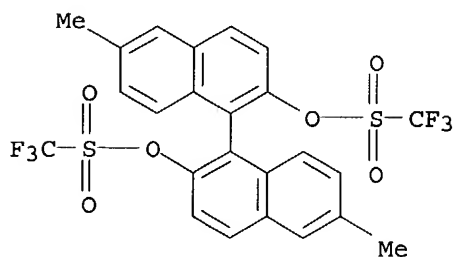
RN 185341-95-1 CAPLUS

CN Methanesulfonic acid, trifluoro-, 7,7'-dimethoxy[1,1'-binaphthalene]-2,2'-  
diyl ester (9CI) (CA INDEX NAME)



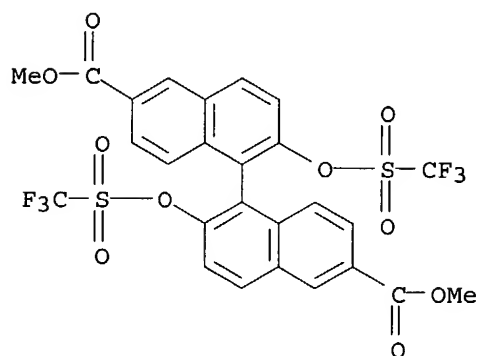
RN 185341-96-2 CAPLUS

CN Methanesulfonic acid, trifluoro-, 6,6'-dimethyl[1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)



RN 185341-97-3 CAPLUS

CN [1,1'-Binaphthalene]-6,6'-dicarboxylic acid, 2,2'-bis[[trifluoromethylsulfonyl]oxy]-, dimethyl ester (9CI) (CA INDEX NAME)



L8 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:731973 CAPLUS

DN 126:7470

TI Process for preparing asymmetric compounds by using metal complex in the asymmetric Michael reaction or asymmetric phosphorylation

IN Shibasaki, Masakatsu; Sasai, Hiroaki; Arai, Takayoshi

PA Nagase & Company, Ltd., Japan

SO PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DT Patent

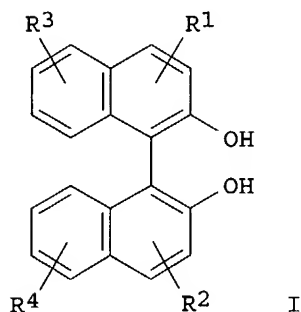
LA Japanese

FAN.CNT 1

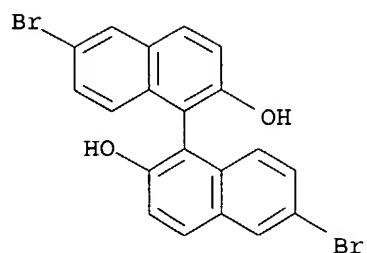
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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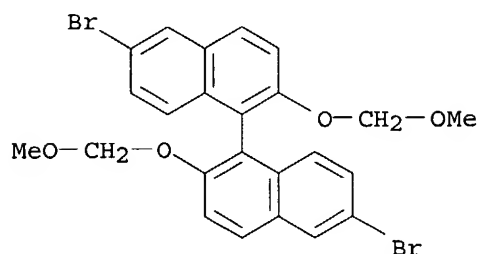
PI WO 9629295 A1 19960926 WO 1996-JP739 19960321 <--  
 W: AU, BG, CA, CN, CZ, HU, KR, MX, NO, PL, SG, US, VN  
 RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
 JP 08319258 A2 19961203 JP 1996-46106 19960304 <--  
 AU 9650142 A1 19961008 AU 1996-50142 19960321 <--  
 EP 826652 A1 19980304 EP 1996-906911 19960321  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI  
 CN 1182412 A 19980520 CN 1996-193449 19960321  
 US 5847186 A 19981208 US 1997-913784 19971205 <--  
 US 6090969 A 20000718 US 1998-149735 19980908 <--  
 PRAI JP 1995-63091 A 19950322  
 JP 1996-46106 A 19960304  
 WO 1996-JP739 W 19960321  
 WO 1996-KP739 W 19960321  
 US 1997-913784 A1 19971205  
 OS CASREACT 126:7470; MARPAT 126:7470  
 GI



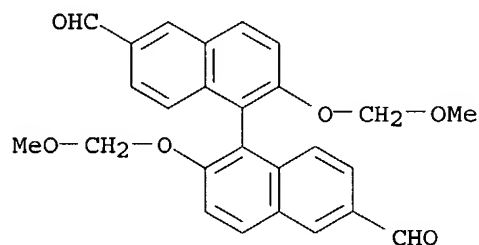
AB This patent application describes a process for preparing an asym. compound by using a metal complex which enables the preparation of an optically active substance not containing any rare earth metal element and having a high optical purity. A metal complex composed of an optically active binaphthol of general formula I [R1 - R4 = H, cyano, etc.], aluminum and an alkali metal (or an alkaline earth metal) is prepared by reacting the optically active binaphthol with lithium aluminum hydride or with a dialkylaluminum hydride and a base containing an alkali metal (or an alkaline earth metal). The use of this metal complex in the asym. Michael reaction or asym. phosphonylation as the **catalyst** makes it possible to prepare an asym. compound having a high optical purity in a high yield.  
 IT 65283-60-5P 179866-74-1P 183737-08-8P  
 183737-09-9P 183737-11-3P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (process for preparing asym. compds. by using metal complex in asym. Michael reaction or asym. phosphonylation)  
 RN 65283-60-5 CAPLUS  
 CN [1,1'-Binaphthalene]-2,2'-diol, 6,6'-dibromo-, (1R)- (9CI) (CA INDEX NAME)



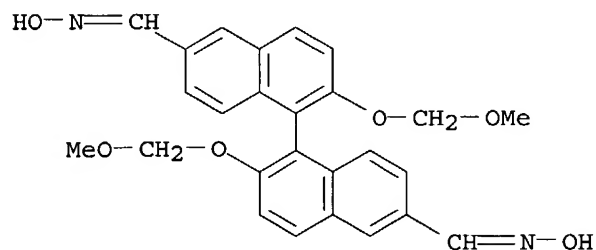
RN 179866-74-1 CAPLUS  
 CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(methoxymethoxy)-, (1R)- (9CI)  
 (CA INDEX NAME)



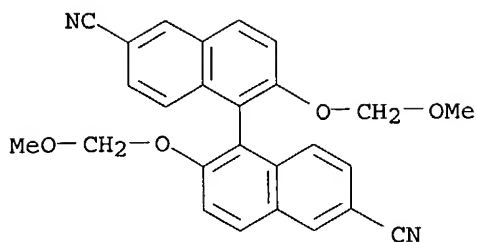
RN 183737-08-8 CAPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dicarboxaldehyde, 2,2'-bis(methoxymethoxy)-,  
 (1R)- (9CI) (CA INDEX NAME)



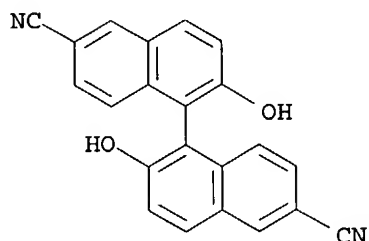
RN 183737-09-9 CAPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dicarboxaldehyde, 2,2'-bis(methoxymethoxy)-,  
 dioxime (9CI) (CA INDEX NAME)



RN 183737-11-3 CAPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-bis(methoxymethoxy)-, (R)-  
 (9CI) (CA INDEX NAME)

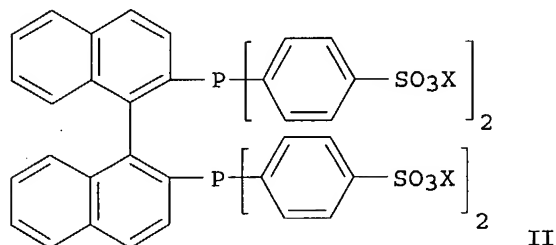
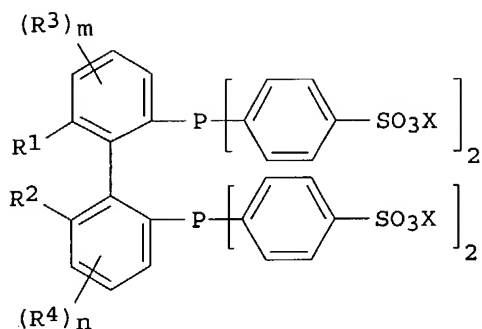


IT 172170-95-5D, complex with aluminum and lithium  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (process for preparing asym. compds. by using metal complex in asym.  
 Michael reaction or asym. phosphonylation)  
 RN 172170-95-5 CAPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-dihydroxy-, (1R)- (9CI)  
 (CA INDEX NAME)



L8 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1995:928182 CAPLUS  
 DN 124:8995  
 TI Water-soluble phosphine biphenylylene and binaphthalenylylene  
 benzenesulfonate derivatives.  
 IN Lalonde, Michel; Schmid, Rudolf  
 PA F. Hoffmann-La Roche AG, Switz.  
 SO Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 667350	A1	19950816	EP 1995-101105	19950127 <--
	EP 667350	B1	19990901		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
	US 5536858	A	19960716	US 1994-349107	19941202 <--
	AT 184011	E	19990915	AT 1995-101105	19950127
	ES 2137383	T3	19991216	ES 1995-101105	19950127
	JP 07252281	A2	19951003	JP 1995-15023	19950201 <--
	CN 1112563	A	19951129	CN 1995-101923	19950210 <--
	CN 1059906	B	20001227		
PRAI	EP 1994-102192	A	19940212		
OS	CASREACT 124:8995; MARPAT 124:8995				
GI					



AB The invention is concerned with novel water soluble racemic or optically active compds. I and II wherein R1, R2, R3 and R4 independently signify lower alkyl or lower alkoxy; m and n are 0, 1 or 2; X signifies H, an alkali metal, the equivalent of an alkali earth metal or an NH<sub>4</sub><sup>+</sup> ion. The invention is also concerned with a process for the manufacture of such compds., complexes of such compds. with a metals of Group VIII and using these complexes as **catalyst** for asym. hydrogenation and for enantioselective H displacement in prochiral allylic systems.

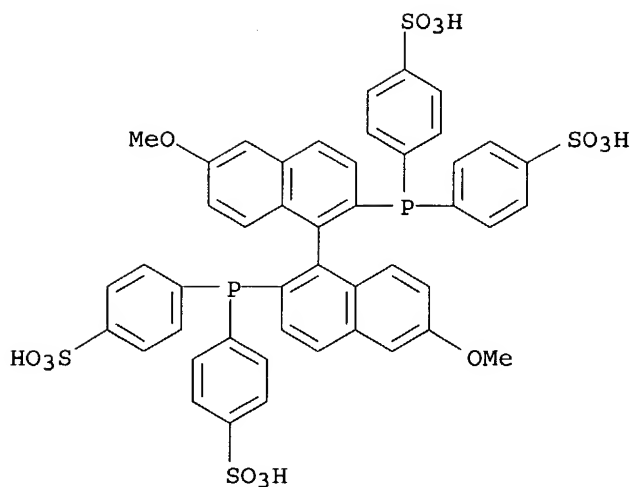
IT 170432-83-4P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of chiral phosphine biphenyllylene and binaphthalenyllylene benzenesulfonates, their ruthenium and rhodium complexes, and stereoselective hydrogenation of unsatd. compds.)

RN 170432-83-4 CAPLUS

CN Benzenesulfonic acid, 4,4',4'',4'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)diphosphinidyne]tetrakis-, tetrasodium salt, (S)- (9CI) (CA INDEX NAME)



●4 Na

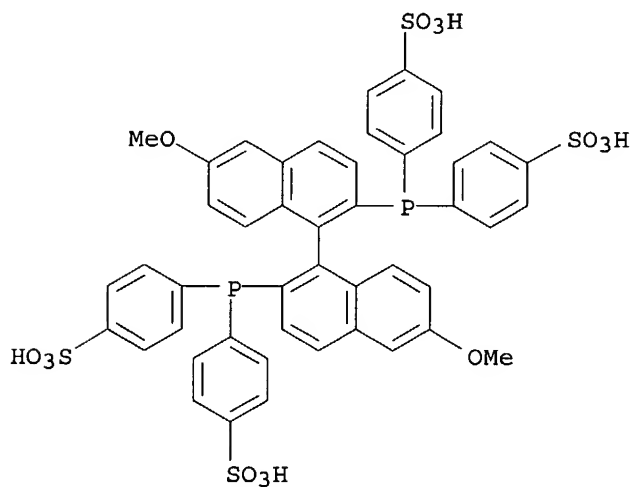
IT 170432-84-5P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
USES (Uses)

(preparation of chiral phosphine biphenylylene and binaphthalenylylene  
benzenesulfonates, their ruthenium and rhodium complexes, and  
stereoselective hydrogenation of unsatd. compds.)

RN 170432-84-5 CAPLUS

CN Benzenesulfonic acid, 4,4',4'',4'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-  
2,2'-diyl)diphosphinidene]tetrakis-, tetrasodium salt, (R)- (9CI) (CA  
INDEX NAME)



●4 Na

IT 170432-95-8 170432-96-9

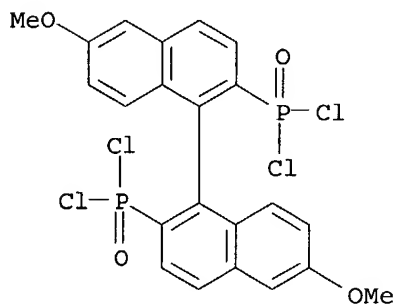
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of chiral phosphine biphenylylene and binaphthalenylylene  
benzenesulfonates, their ruthenium and rhodium complexes, and

stereoselective hydrogenation of unsatd. compds.)

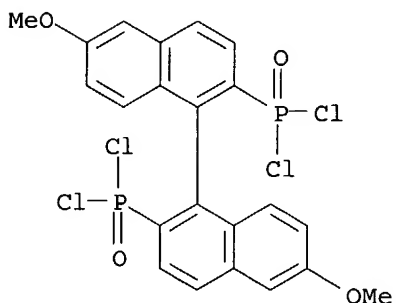
RN 170432-95-8 CAPLUS

CN Phosphonic dichloride, (6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)bis-, (S)- (9CI) (CA INDEX NAME)



RN 170432-96-9 CAPLUS

CN Phosphonic dichloride, (6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)bis-, (R)- (9CI) (CA INDEX NAME)



IT 170432-91-4P 170432-92-5P 170432-93-6P

170432-94-7P

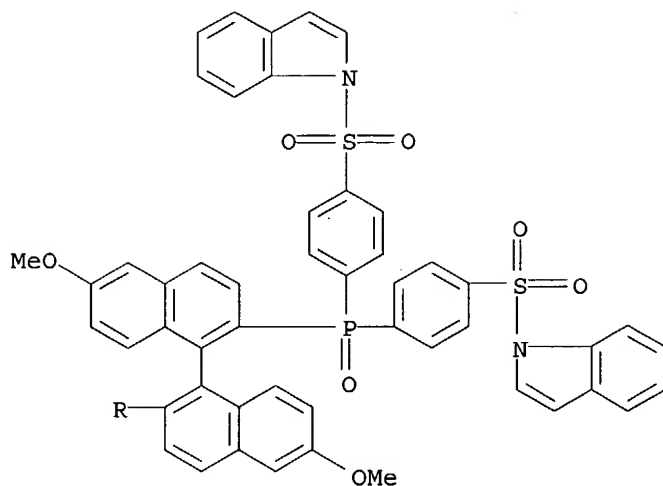
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of chiral phosphine biphenylene and binaphthalenylene benzenesulfonates, their ruthenium and rhodium complexes, and stereoselective hydrogenation of unsatd. compds.)

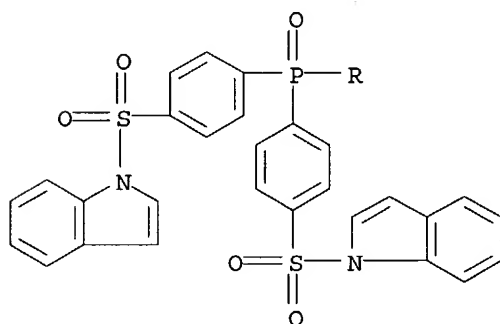
RN 170432-91-4 CAPLUS

CN 1H-Indole, 1,1',1'',1'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)bis[phosphinyldynebis(4,1-phenylenesulfonyl)]]tetrakis-, (S)- (9CI) (CA INDEX NAME)

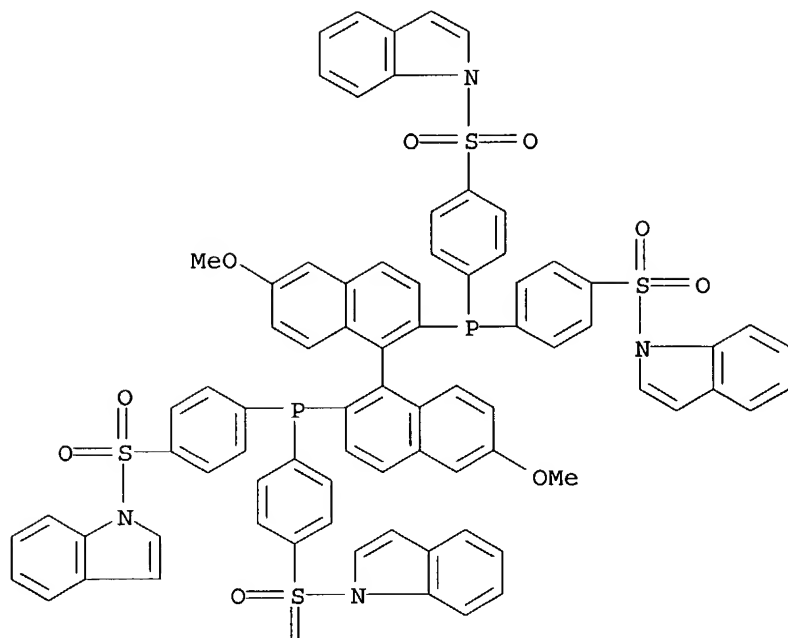
PAGE 1-A



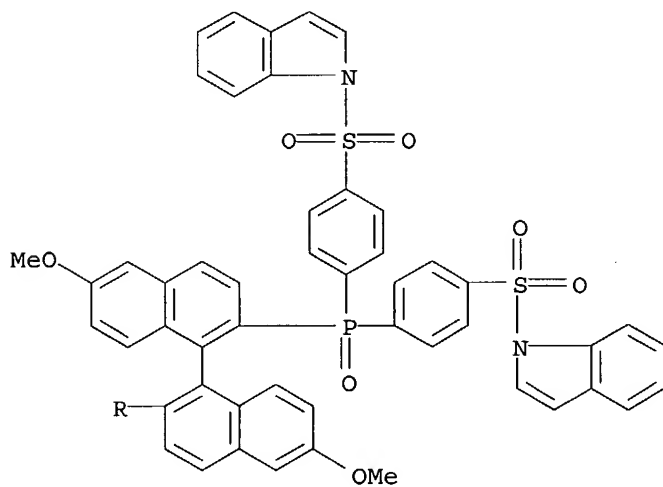
PAGE 2-A



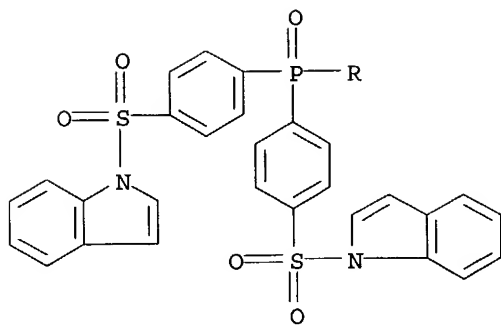
RN 170432-92-5 CAPLUS  
CN 1H-Indole, 1,1',1'',1'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-  
diyl)bis[phosphinidynebis(4,1-phenylenesulfonyl)]]tetrakis-, (S)- (9CI)  
(CA INDEX NAME)



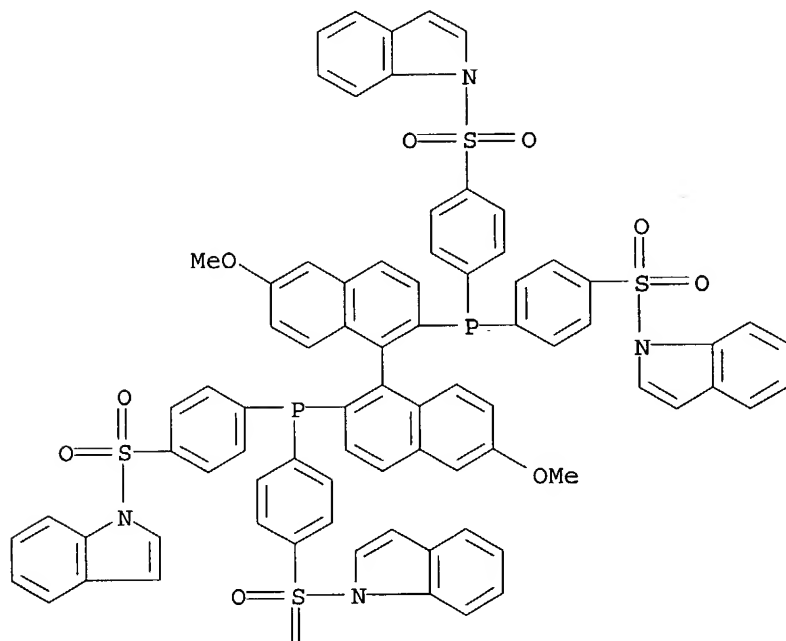
RN 170432-93-6 CAPLUS  
 CN 1H-Indole, 1,1',1'',1'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-diyl)bis[phosphinyldynebis(4,1-phenylenesulfonyl)]]tetrakis-, (R)- (9CI)  
 (CA INDEX NAME)







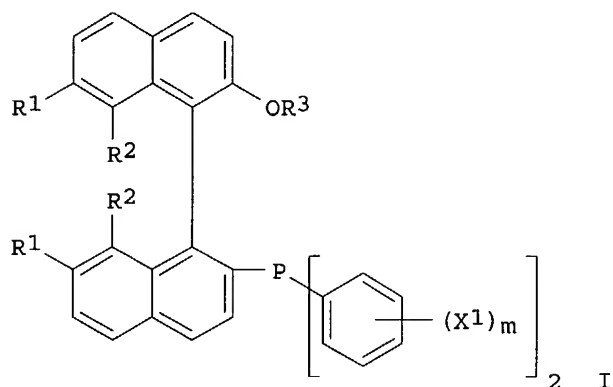
RN 170432-94-7 CAPLUS  
 CN 1H-Indole, 1,1',1'',1'''-[(6,6'-dimethoxy[1,1'-binaphthalene]-2,2'-  
 diyl)bis[phosphinidynebis(4,1-phenylenesulfonyl)]]tetrakis-, (R)- (9CI)  
 (CA INDEX NAME)



L8 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1995:716774 CAPLUS  
 DN 123:144274  
 TI Preparation of tertiary phosphines and their transition metal complexes as  
**catalysts** for asymmetric synthesis reactions  
 IN Hayashi, Tamio; Uozumi, Yasuhiro; Iwakura, Kazunori; Kurimoto, Isao;

Minai, Masayoshi  
 PA Sumitomo Chemical Co., Ltd., Japan  
 SO Eur. Pat. Appl., 21 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 647647	A1	19950412	EP 1994-111780	19940728 <--
	EP 647647	B1	20011024		
	R: CH, DE, FR, GB, LI				
	JP 07149776	A2	19950613	JP 1994-15341	19940209 <--
	JP 07224073	A2	19950822	JP 1994-16760	19940210 <--
	JP 3489176	B2	20040119		
	US 5523437	A	19960604	US 1994-280814	19940726 <--
PRAI	JP 1993-251635	A	19931007		
	JP 1994-15341	A	19940209		
	JP 1994-16760	A	19940210		
OS	MARPAT 123:144274				
GI					



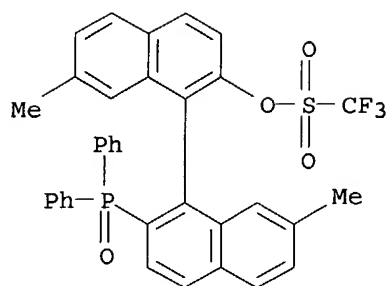
AB The preparation of tertiary phosphine compound I (R1, R2 = independently from each other a H, Me; R1R2 = CH:CHCH:CH; R3 = H, C5-7 cycloalkyl, lower alkyl group which may be substituted with halogen, lower alkoxy, lower alkoxyalkoxy, Ph; X1 = halogen atom when both R1 and R2 are hydrogens, hydrogen atom, halogen atom, lower alkyl group, lower alkoxy group when at least one of R1 and R2 is not a hydrogen atoms; m = 1-5), useful as ligand of a transition metal complex that can catalyze various reactions, is described. Thus, reduction of (R)-(+)-3-diphenylphosphinyl-3'-methoxy-4,4'-biphenanthryl (preparation given) with HSiCl3 in the presence of Et3N gave title compound, (R)-(+)-3-diphenylphosphino-3'-methoxy-4,4'-biphenanthryl (II), which was used in asym. synthesis of  $\alpha$ -olefins. Thus, tris(dibenzylideneacetone) (chloroform) dipalladium(0)-catalyzed reaction of geranylmethyl carbonate with formic acid in the presence of 1,8-bis(dimethylamino)naphthalene and chiral cocatalyst II gave (S)-3,7-dimethyl-1,6-octadiene.

IT 165730-04-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and hydrolysis of)

RN 165730-04-1 CAPLUS

CN Methanesulfonic acid, trifluoro-, 2'-(diphenylphosphinyl)-7,7'-dimethyl[1,1'-binaphthalen]-2-yl ester, (R)- (9CI) (CA INDEX NAME)

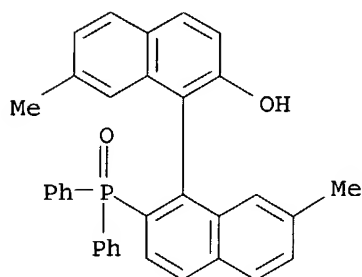


IT 165730-05-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and methylation of)

RN 165730-05-2 CAPLUS

CN [1,1'-Binaphthalen]-2-ol, 2'-(diphenylphosphinyl)-7,7'-dimethyl-, (R)-  
(9CI) (CA INDEX NAME)

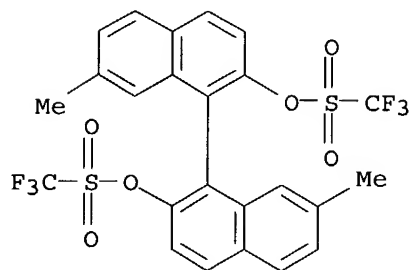


IT 165730-03-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and phosphorylation of)

RN 165730-03-0 CAPLUS

CN Methanesulfonic acid, trifluoro-, 7,7'-dimethyl[1,1'-binaphthalene]-2,2'-  
diyl ester, (R)- (9CI) (CA INDEX NAME)

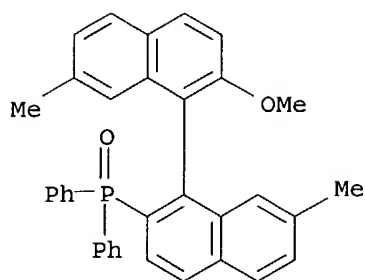


IT 165730-06-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reduction of)

RN 165730-06-3 CAPLUS

CN Phosphine oxide, (2'-methoxy-7,7'-dimethyl[1,1'-binaphthalen]-2-yl)diphenyl-, (R)- (9CI) (CA INDEX NAME)

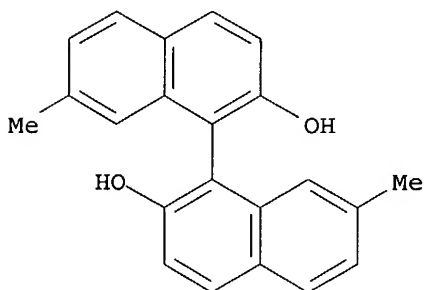


IT 157584-78-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and resolution of)

RN 157584-78-6 CAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 7,7'-dimethyl- (9CI) (CA INDEX NAME)

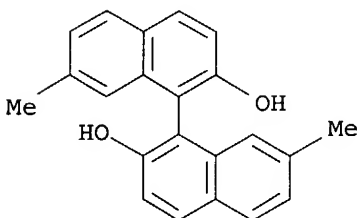


IT 157584-79-7P, (R)-(+)-2,2'-Dihydroxy-7,7'-dimethyl-1,1'-binaphthyl

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and triflation of)

RN 157584-79-7 CAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 7,7'-dimethyl-, (R)- (9CI) (CA INDEX NAME)

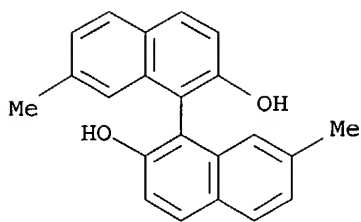


IT 157584-80-0P, (S)-(-)-2,2'-Dihydroxy-7,7'-dimethyl-1,1'-binaphthyl

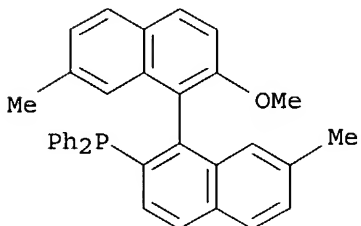
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 157584-80-0 CAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 7,7'-dimethyl-, (S)- (9CI) (CA INDEX NAME)

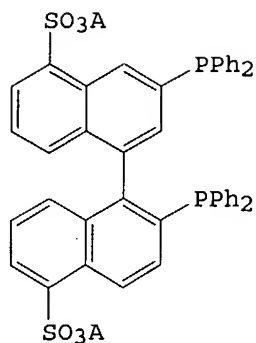


IT 165730-07-4P  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
 USES (Uses)  
 (preparation of tertiary phosphines and their transition metal complexes as  
**catalysts** for asym. synthesis reactions)  
 RN 165730-07-4 CAPLUS  
 CN Phosphine, (2'-methoxy-7,7'-dimethyl[1,1'-binaphthalen]-2-yl)diphenyl-,  
 (R)- (9CI) (CA INDEX NAME)



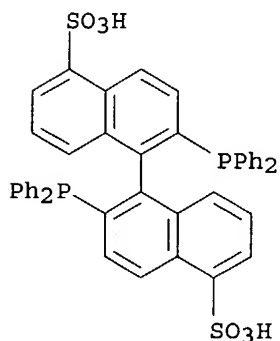
L8 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:581016 CAPLUS  
 DN 119:181016  
 TI Preparation of water-soluble alkali metal sulfonate-substituted  
 binaphthylphosphine transition metal complexes and enantioselective  
 hydrogenation method using them  
 IN Ishizaki, Takerou; Kumobayashi, Hidenori  
 PA Takasago International Corp., Japan  
 SO Eur. Pat. Appl., 9 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 544455	A1	19930602	EP 1992-310561	19921119 <--
	EP 544455	B1	19970212		
	R: CH, DE, FR, GB, IT, LI				
	JP 05170780	A2	19930709	JP 1991-331535	19911121 <--
	JP 2736947	B2	19980408		
	US 5274146	A	19931228	US 1992-977638	19921117 <--
	US 5324861	A	19940628	US 1993-116583	19930907 <--
PRAI	JP 1991-331535		19911121		
	US 1992-977638		19921117		
OS	CASREACT 119:181016; MARPAT 119:181016				
GI					



I

- AB  $[\text{M}(\text{X})_n(\text{Q})(\text{SO}_3\text{A-BINAP})]\text{Y}$  ( $\text{M} = \text{Ru}, \text{Ir}, \text{Rh}, \text{Pd}, \text{etc.}$ ;  $\text{SO}_3\text{A-BINAP}$  = tertiary phosphine represented by formula I ( $\text{A}$  = alkali metal atom),  $\text{X} = \text{Cl}, \text{Br}, \text{iodo}$ ;  $n = 0, 1$ ;  $\text{Q}$  = benzene or p-cymene,  $\text{Y} = \text{Cl}, \text{Br}, \text{iodo}, \text{ClO}_4, \text{PF}_6, \text{BF}_4$ ) were prepared and shown to be **catalysts** for the enantioselective hydrogenation of olefins, ketones, and imines.
- IT **150271-78-6P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reactions of, with ruthenium and iridium complexes, enantioselective hydrogenation **catalyst** from)
- RN 150271-78-6 CAPLUS
- CN [1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, disodium salt, (R)- (9CI) (CA INDEX NAME)

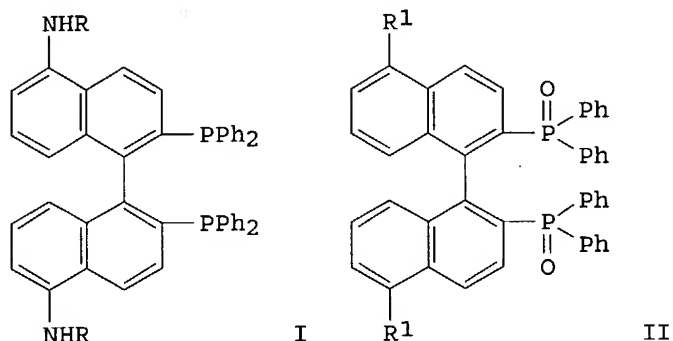


●2 Na

L8 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1988:204837 CAPLUS  
 DN 108:204837  
 TI Preparation of chiral phosphine compounds  
 IN Okano, Tamon; Shimano, Yasunobu; Konishi, Hisatoshi; Kiji, Jitsuo; Fukuyama, Keiichi; Kumobayashi, Hidenori; Akutagawa, Susumu  
 PA Takasago Perfumery Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 62178594	A2	19870805	JP 1986-19203	19860201 <--
	JP 05011117	B4	19930212		
	EP 235450	A1	19870909	EP 1986-309141	19861121 <--
	R: CH, DE, FR, GB, LI, NL				
	US 4705895	A	19871110	US 1986-937805	19861121 <--
PRAI	JP 1986-19203		19860201		
GI					

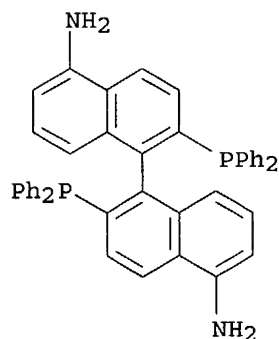


AB Phosphine derivs. (I; R = H, Ac), useful in asym. synthesis, are prepared  
 Nitration of oxide (+)-II (R1 = H) in Ac2O gave 98.6% dinitro derivative  
 (+)-II (R1 = NO2), which was reduced over SnCl2 in EtOH-HCl to give 85.3%  
 diamine derivative (+)-II (R1 = NH2) (III). Reduction of III in MePh over  
 SiHCl3  
 and Pr3N gave 70.5% phosphine (+)-I (R = H) (IV), which was refluxed with  
 Ac2O and Pr3N under N to give 76.0% diamide (+)-I (R = Ac). Asym.  
 isomerization of Me2C:CHCH2CH2CMe:CHCH2NMe2 in the presence of  
 Rh-IV-norbornadiene ClO4- catalyst gave  
 Me2C:CHCH2CH2CHMeCH:CHNMe2 with 39.6% conversion.

IT 114317-10-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and complexation of, with rhodium norbornadiene perchlorate)

RN 114317-10-1 CAPLUS

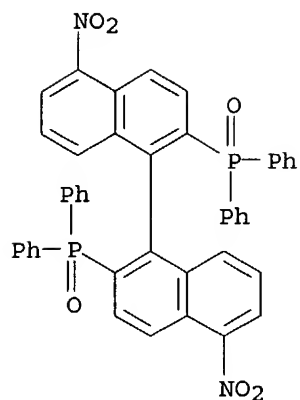
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (+)-  
 (9CI) (CA INDEX NAME)



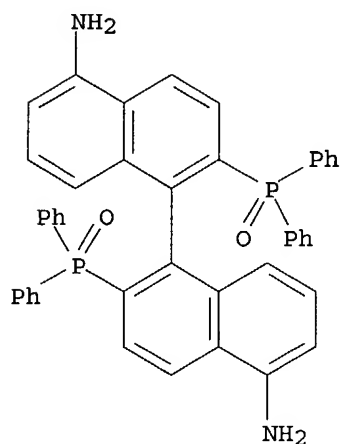
IT 114317-08-7P 114317-09-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reduction of)

RN 114317-08-7 CAPLUS

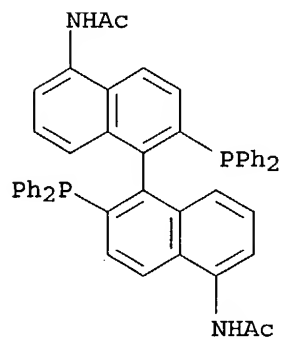
CN Phosphine oxide, (5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-  
 , (+)- (9CI) (CA INDEX NAME)



RN 114317-09-8 CAPLUS  
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphiny)-, (+)-  
 (9CI) (CA INDEX NAME)



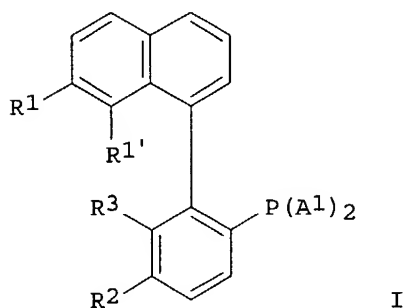
IT 114317-11-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 114317-11-2 CAPLUS  
 CN Acetamide, N,N'-[2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-  
 diyl]bis-, (+)- (9CI) (CA INDEX NAME)





AN 1996:610021 CAPLUS  
 DN 125:248105  
 TI Optically active tertiary phosphine compounds, transition metal complexes comprising the same as ligands and process for preparing optically active organic silicon compounds using said transition metal complexes  
 IN Hayashi, Tamio; Minai, Masayoshi; Iwakura, Kazunori  
 PA Sumitomo Chemical Company Limited, Japan  
 SO Eur. Pat. Appl., 20 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

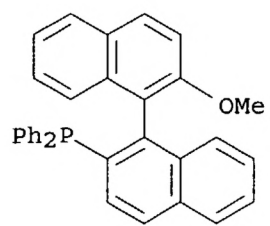
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 731105	A1	19960911	EP 1996-103689	19960308 <--
	EP 731105	B1	20011205		
	R: CH, DE, GB, LI				
	JP 08245662	A2	19960924	JP 1995-51094	19950310 <--
	JP 08245663	A2	19960924	JP 1995-51482	19950310 <--
	JP 09143185	A2	19970603	JP 1996-44680	19960301 <--
	JP 3463450	B2	20031105		
	US 5621129	A	19970415	US 1996-612108	19960307 <--
PRAI	JP 1995-49685	A	19950309		
	JP 1995-51094	A	19950310		
	JP 1995-51482	A	19950310		
	JP 1995-238204	A	19950918		
OS	CASREACT 125:248105; MARPAT 125:248105				
GI					



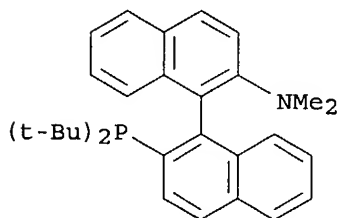
AB The preparation of tertiary phosphine compds. I ( $R_1, R_1' = H, R_1R_1' = CH:CHCH:CH$ ;  $R_2R_3 = 2-CH:CHC_6H_4$ , etc.;  $R_2 = H, R_3 =$  substituted or unsubstituted alkyl, Ph group, etc.;  $A_1 = 3$ -trifluoromethylphenyl or 3,5-bis(trifluoromethyl)phenyl, etc.) was given. I was used as cocatalyst to prepare optically active silicon compound. Thus, (S)-3-diphenylphosphino-4,4'-biphenanthryl (preparation given)/allylpalladium chloride dimer catalyzed silylation of styrene with trichlorosilane gave 1-phenyl-1-trichlorosilylethene. Oxidative desilylation of 1-phenyl-1-trichlorosilylethene with  $KF/KHCO_3/H_2O_2$  in THF/MeOH gave optically pure (R)-1-phenethyl alc. in 95% yield.

IT 145964-33-6  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of optically active tertiary phosphine compds. as cocatalysts for preparing optically active organic silicon compds.)

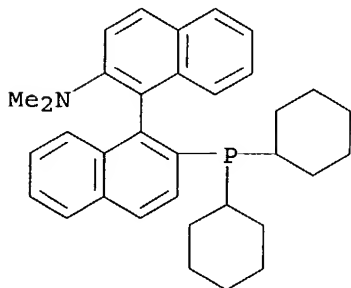
RN 145964-33-6 CAPLUS  
 CN Phosphine, [(1R)-2'-methoxy[1,1'-binaphthalen]-2-yl]diphenyl- (9CI) (CA INDEX NAME)



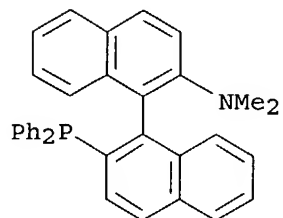
AN 2000:792828 CAPLUS  
 DN 134:115733  
 TI A Catalytic Asymmetric Suzuki Coupling for the Synthesis of Axially Chiral Biaryl Compounds  
 AU Yin, Jingjun; Buchwald, Stephen L.  
 CS Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA  
 SO Journal of the American Chemical Society (2000), 122(48), 12051-12052  
 CODEN: JACSAT; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 134:115733  
 AB Binaphthyl ligands were used for the catalytic asym. Suzuki coupling to form highly enantiomerically enriched biaryl derivs. This is the first example of a catalytic enantioselective cross-coupling reaction that allows the preparation of functionalized biaryl compds. For example, asym. Suzuki coupling of (1-bromo-2-naphthalenyl)phosphonic acid di-Me ester with (2-methylphenyl)boronic acid in the presence of (+)-(S)-2'-(dicyclohexylphosphino)-N,N-dimethyl-[1,1'-binaphthalen]-2-amine and Pd<sub>2</sub>(dba)<sub>3</sub> gave (+)-[1-(2-methylphenyl)-2-naphthalenyl]phosphonic acid di-Me ester in 95% yield and in 86% enantiomeric excess. Subsequent phenylation of the latter with phenylmagnesium bromide gave (-)-1-(2-methylphenyl)-2-(diphenylphosphinyl)naphthalene. Reduction of the latter gave (-)-[1-(2-methylphenyl)-2-naphthalenyl]diphenylphosphine.  
 IT 224311-52-8 255835-81-5 255882-14-5  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of axially chiral biaryl compds. via Suzuki coupling of arylboronic acids and halobenzene derivs. in presence of palladium and binaphthalene ligand)  
 RN 224311-52-8 CAPLUS  
 CN [1,1'-Binaphthalen]-2-amine, 2'-(bis(1,1-dimethylethyl)phosphino)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 255835-81-5 CAPLUS  
 CN [1,1'-Binaphthalen]-2-amine, 2'-(dicyclohexylphosphino)-N,N-dimethyl- (9CI) (CA INDEX NAME)

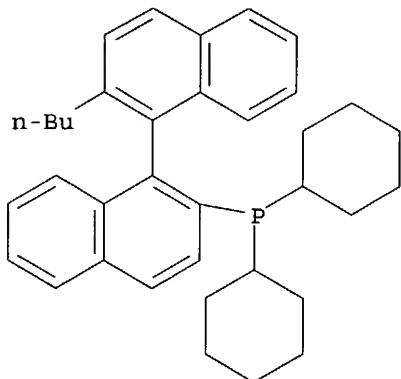


RN 255882-14-5 CAPLUS  
CN [1,1'-Binaphthalen]-2-amine, 2'-(diphenylphosphino)-N,N-dimethyl- (9CI)  
(CA INDEX NAME)



RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

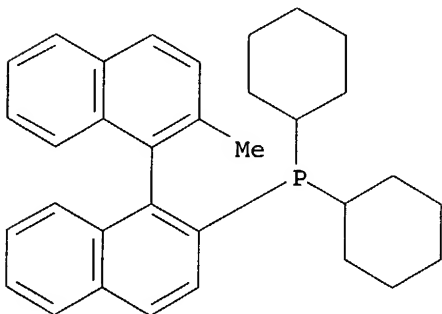
L5 ANSWER 1 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 255882-18-9 REGISTRY  
 CN Phosphine, [(1R)-2'-butyl[1,1'-binaphthalen]-2-yl]dicyclohexyl-  
 (9CI) (CA INDEX NAME)  
 MF C36 H43 P  
 SR CA  
 LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: USES (Uses)  
 RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
 3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

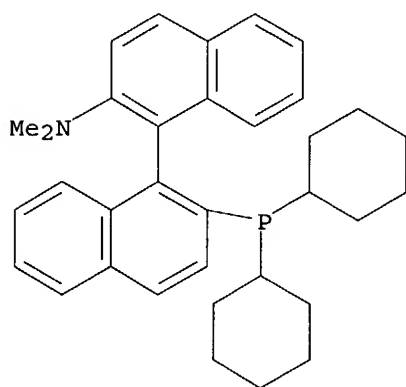
L5 ANSWER 2 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 255882-17-8 REGISTRY  
 CN Phosphine, dicyclohexyl[(1R)-2'-methyl[1,1'-binaphthalen]-2-yl]-  
 (9CI) (CA INDEX NAME)  
 MF C33 H37 P  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: USES (Uses)  
 RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

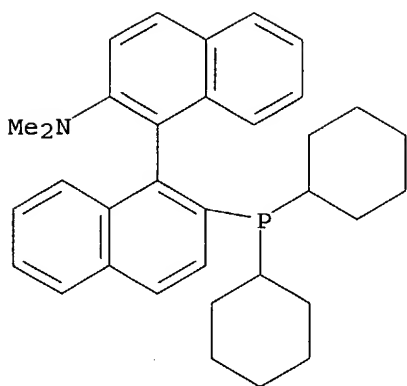
L5 ANSWER 3 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255882-16-7 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-(dicyclohexylphosphino)-N,N-dimethyl-, (S)- (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN (S)-(+)-2'-(Dicyclohexylphosphino)-N,N-dimethyl[1,1'-binaphthalen]-2-amine  
MF C34 H40 N P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

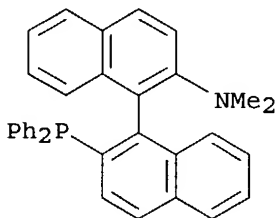
L5 ANSWER 4 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255882-15-6 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-(dicyclohexylphosphino)-N,N-dimethyl-, (R)- (9CI) (CA INDEX NAME)  
MF C34 H40 N P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

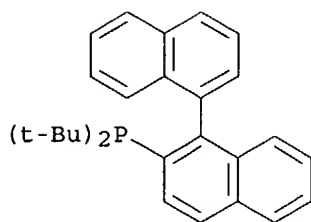
L5 ANSWER 5 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255882-14-5 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-(diphenylphosphino)-N,N-dimethyl-  
(9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C34 H28 N P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); USES (Uses)  
RL.NP Roles from non-patents: USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

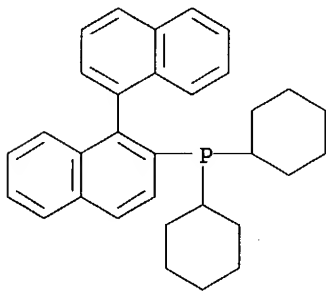
L5 ANSWER 6 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255836-67-0 REGISTRY  
CN Phosphine, [1,1'-binaphthalen]-2-ylbis(1,1-dimethylethyl)- (9CI)  
(CA INDEX NAME)  
FS 3D CONCORD  
MF C28 H31 P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

10 REFERENCES IN FILE CA (1907 TO DATE)  
10 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 7 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255836-65-8 REGISTRY  
CN Phosphine, [1,1'-binaphthalen]-2-ylidicyclohexyl- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C32 H35 P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)

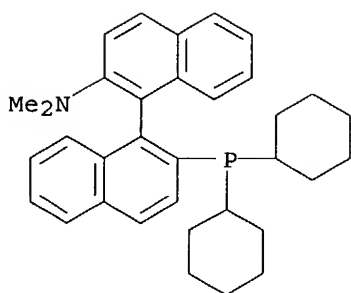


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 8 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 255835-81-5 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-(dicyclohexylphosphino)-N,N-dimethyl- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C34 H40 N P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); USES (Uses)  
RL.NP Roles from non-patents: USES (Uses)

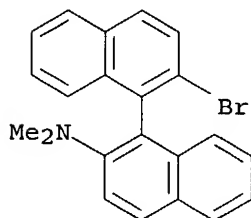




\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

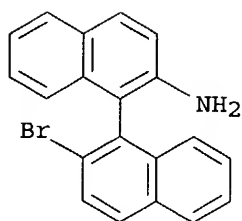
L5 ANSWER 9 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 224311-59-5 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-bromo-N,N-dimethyl- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C22 H18 Br N  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

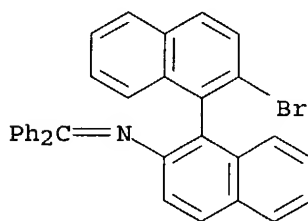
L5 ANSWER 10 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 224311-58-4 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-bromo- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C20 H14 Br N  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

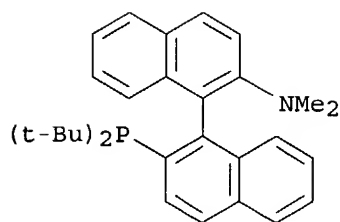
L5 ANSWER 11 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 224311-57-3 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-bromo-N-(diphenylmethylene)- (9CI)  
(CA INDEX NAME)  
MF C33 H22 Br N  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 12 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 224311-52-8 REGISTRY  
CN [1,1'-Binaphthalen]-2-amine, 2'-[bis(1,1-dimethylethyl)phosphino]-N,N-dimethyl- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C30 H36 N P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

7 REFERENCES IN FILE CA (1907 TO DATE)

7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 13 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN

RN 213774-71-1 REGISTRY

CN Phosphine, [1,1'-binaphthalene]-2,2'-diylbis[dicyclohexyl- (9CI)  
(CA INDEX NAME)

FS 3D CONCORD

MF C44 H56 P2

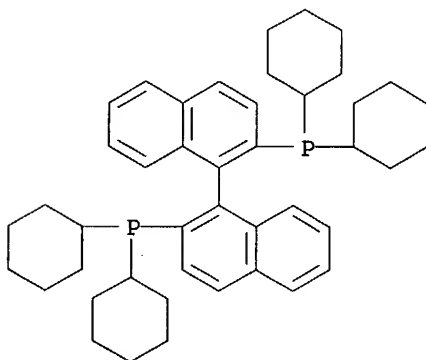
SR CA

LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: PREP (Preparation); USES (Uses)

RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

7 REFERENCES IN FILE CA (1907 TO DATE)

7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 14 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN

RN 207611-58-3 REGISTRY

CN 1,1'-Binaphthalene, 2-bromo- (9CI) (CA INDEX NAME)

FS 3D CONCORD

MF C20 H13 Br

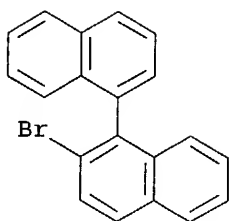
SR CA

LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: RACT (Reactant or reagent)

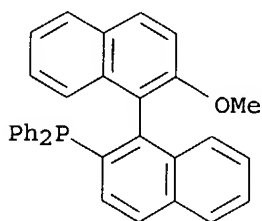
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 15 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 145964-33-6 REGISTRY  
CN Phosphine, [(1R)-2'-methoxy[1,1'-binaphthalen]-2-yl]diphenyl-  
(9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphine, (2'-methoxy[1,1'-binaphthalen]-2-yl)diphenyl-, (R)-  
OTHER NAMES:  
CN (R)-(+)-2-Diphenylphosphino-2'-methoxy-1,1'-binaphthyl  
CN (R)-(+)-MOP  
MF C33 H25 O P  
SR CA  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX,  
CSCHEM, USPATFULL  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: RACT (Reactant or reagent); USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)  
RLD.NP Roles for non-specific derivatives from non-patents: PRP (Properties)

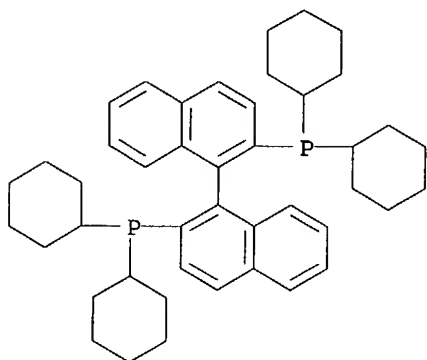


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

59 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
59 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 16 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 139139-92-7 REGISTRY  
CN Phosphine, (1R)-[1,1'-binaphthalene]-2,2'-diylbis[dicyclohexyl-  
(9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Phosphine, [1,1'-binaphthalene]-2,2'-diylbis[dicyclohexyl-, (R)-  
MF C44 H56 P2  
SR CA  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, USPATFULL  
(\*File contains numerically searchable property data)

DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: USES (Uses)  
 RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties); RACT  
 (Reactant or reagent); USES (Uses)



**\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\***

7 REFERENCES IN FILE CA (1907 TO DATE)  
 7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 17 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN

RN 100165-88-6 REGISTRY

CN Phosphine, (1S) - [1,1'-binaphthalene] - 2,2'-diylbis[bis(4-methylphenyl) -  
 (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Phosphine, [1,1'-binaphthalene] - 2,2'-diylbis[bis(4-methylphenyl) - ,  
 (S) -

OTHER NAMES:

CN (-) - Tol-BINAP

CN (1S) - [1,1'-Binaphthalene] - 2,2'-diylbis[bis(4-  
 methylphenyl)phosphine]

CN (S) - (-) - 2,2'-Bis[di(p-tolyl)phosphino] - 1,1'-binaphthyl

CN (S) - 2,2'-Bis[bis(4-methylphenyl)phosphino] - 1,1'-binaphthyl

CN (S) - 4-Me-BINAP

CN (S) - Tol-BINAP

MF C48 H40 P2

SR CA

LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, GMELIN\*,  
 USPATFULL

(\*File contains numerically searchable property data)

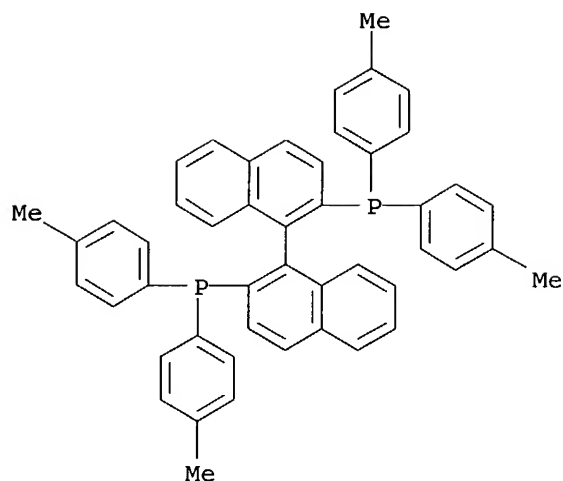
DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);  
 USES (Uses)

RLD.P Roles for non-specific derivatives from patents: PREP (Preparation);  
 USES (Uses)

RL.NP Roles from non-patents: PREP (Preparation); PROC (Process); RACT  
 (Reactant or reagent); USES (Uses)

RLD.NP Roles for non-specific derivatives from non-patents: PREP  
 (Preparation); PRP (Properties); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

79 REFERENCES IN FILE CA (1907 TO DATE)  
 6 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 79 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 18 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN

RN 76189-56-5 REGISTRY

CN Phosphine, (1S)-[1,1'-binaphthalene]-2,2'-diylbis[diphenyl- (9CI)  
 (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Phosphine, [1,1'-binaphthalene]-2,2'-diylbis[diphenyl-, (S)-

OTHER NAMES:

CN (-)-BINAP

CN (1S)-[1,1'-Binaphthalene]-2,2'-diylbis[diphenylphosphine]

CN (S)-(-)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl

CN (S)-(-)-BINAP

CN (S)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl

CN (S)-BINAP

MF C44 H32 P2

CI COM

LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CSCHM,  
 GMELIN\*, MRCK\*, MSDS-OHS, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

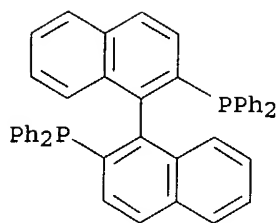
DT.CA Caplus document type: Conference; Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT  
 (Reactant or reagent); USES (Uses)

RLD.P Roles for non-specific derivatives from patents: PREP (Preparation);  
 RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); PREP (Preparation);  
 PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES  
 (Uses)

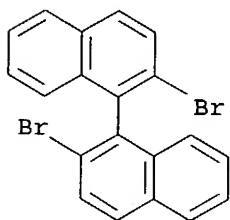
RLD.NP Roles for non-specific derivatives from non-patents: PREP  
 (Preparation); PRP (Properties); USES (Uses)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

388 REFERENCES IN FILE CA (1907 TO DATE)  
 27 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 390 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 19 OF 19 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 74866-28-7 REGISTRY  
 CN 1,1'-Binaphthalene, 2,2'-dibromo- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1,1'-Binaphthyl, 2,2'-dibromo- (6CI)  
 OTHER NAMES:  
 CN (±)-2,2'-Dibromo-1,1'-binaphthalene  
 CN 2,2'-Dibromo-1,1'-binaphthalene  
 CN 2,2'-Dibromo-1,1'-binaphthyl  
 FS 3D CONCORD  
 DR 76284-65-6, 79455-17-7  
 MF C20 H12 Br2  
 LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,  
 CHEMINFORMRX, CSCHEM, SPECINFO, USPATFULL  
 (\*File contains numerically searchable property data)  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: PREP (Preparation); PROC (Process); RACT (Reactant  
 or reagent)  
 RL.NP Roles from non-patents: FORM (Formation, nonpreparative); PREP  
 (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or  
 reagent); USES (Uses); NORL (No role in record)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

61 REFERENCES IN FILE CA (1907 TO DATE)  
 62 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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